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ABSTRACT

This study assessed the accuracy of students' academic self-perceptions. Over the course of a semester, college students in three different classes estimated their grades multiple times before and after taking each examination in that class. A total of 76 female and 68 male students participated. Results are reported for the following topics: (1) the accuracy of expectancies and self-evaluations and gender differences; (2) accuracy of post-examination self-evaluations of grades; (3) accuracy of grade expectancies for the next examination; (4) self-consistency; (5) the effect of experience on the accuracy of expectancies; (6) the effect of temporal proximity on the accuracy of expectancies and self-evaluations; and (7) the role of individual differenc variables in accuracy. Students overestimated their grades at all points in the semester. The expected gender difference in the accuracy with which males and females predict exam grades was found in only one class. Discussion is centered around evidence for gender differences, self-consistency, effect of experience and temporal proximity in the accuracy of expectations and self-evaluations. (EMK)

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Gender Differences in the Accuracy of Grade Expectations and Self-evaluations[1]

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Abstract

The goals of this study were to assess (1) how accurate students' expectancies and post-examination self-evaluations are and whether gender differences in the accuracy of expectancies and self-evaluations of performance on examinations exist, (2) whether expected grades predict post-examination self-evaluations of performance even with actual grades controlled (self-consistency effect), (3) whether students' grade expectations and evaluations become more realistic with experience, (4) whether temporal proximity to an examination increases the accuracy of expected grades, and (5) the role of individual difference variables in the accuracy of self-perceptions. Throughout the course of a semester students in Introductory Psychology, Social Psychology, and Computer Science courses estimated their grades for each of their examinations. They predicted their grades one week prior to and immediately prior to each examination. Immediately after an examination they indicated how well they thought they had done and predicted their grade on the next examination. Upon receipt of their grade for an examination, they again predicted their grades for the next examination. Students overestimated their grades at all points in the semester although females in Introductory Psychology overestimated their grades less than males did. Expected grades were a better predictor of students' post-examination self-evaluations of grades than their actual grade was. Expectancies and self-evaluations became more accurate with experience for Introductory Psychology students. Temporal proximity to an examination increased the accuracy of expected grades only slightly.

Research on the accuracy of self-perceptions has recently seen a revival. Studies indicate that individuals are far from accurate self-evaluators when judging their abilities (Arnold, Willoughby, & Calkins, 1985; Beyer, 1990, 1998; Beyer & Bowden, 1997; Borkenau & Liebler, 1993; John & Robins, 1994; Kurman & Sriram, 1997) or their attractiveness (Gurman & Balban, 1990). Whether people's self-views are accurate is a theoretically intriguing question. It is also an issue of great practical importance because "accuracy affords predictability that may help persons cope with their social and physical environments" (Kruglanski, 1989, p. 395). Self-perceptions that are out of touch with reality not only reveal a lack of self-knowledge but may also impede effective self-regulation and goal setting.

This study was designed to assess the accuracy of students' academic self-perceptions. Specifically, the goals of this study were to assess (1) how accurate students' expectancies and post-examination self-evaluations are and whether gender differences in the accuracy of expectancies and self-evaluations of performance on examinations exist, (2) whether expected grades predict post-examination self-evaluations of performance even with actual grades controlled (self-consistency effect), (3) whether students' grade expectations and evaluations become more realistic with experience, (4) whether temporal proximity to an examination increases the accuracy of expected grades, and (5) the role of individual difference variables in the accuracy of self-perceptions.

Gender differences in the accuracy of expectancies and self-evaluations and the self-consistency effect

One variable which affects the accuracy of individuals' self-perceptions is gender. Girls' expectancies of performance on motor tasks are more accurate than those of boys (Powel & Gray, 1995). Significant gender differences have also been found in the accuracy with which participants estimate their IQs (Reilly & Mulhern, 1995), evaluate their productivity at cyclical graphs (Roberts & Nolen-Hoeksema, 1989), judge their performance in a wayfinding task (Lawton, Charleston, & Zieles, 1996), and judge their own attractiveness (Gabriel, Critelli, & Ee, 1994). Hannover (1991) also found that girls, but not boys, underestimated their grades in a masculine subject (mathematics). No such gender difference in the accuracy of self-evaluation was found in a feminine subject (German). Cross-culturally, both Singaporean and Israeli women overestimated their grades less than did their male counterparts (Kurman & Sriram, 1997).

Beyer (1990, 1998; Beyer & Bowden, 1997) found gender differences in the accuracy of self-perceptions on a masculine task. Females significantly underestimated their performance, whereas males accurately evaluated their performance. As hypothesized, no gender differences in the accuracy of self-evaluations were found for feminine and neutral tasks. This pattern of results was explained by participants' reliance on self-consistency: Participants' expectancies predicted their post-task self-evaluations even when actual performance was statistically controlled. Thus, two individuals with identical performances but dissimilar expectancies differed in their post-task self-evaluations of performance. Females' inordinately low expectancies for masculine tasks negatively biased their post-task self-evaluations.

The tasks in this prior research had been extensively pretested to ensure that the level of difficulty would be comparable and that the gender-type of the task was appropriate. The tasks were also administered under tight experimental control. The findings suggest that females' self-evaluations in masculine domains are inappropriately negative. In the academic arena,

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inaccurately low expectancies may signal motivational deficits ("why study, it's hopeless") and/or lead to an avoidance of masculine courses, contributing to the low representation of women in the sciences. However, the tasks used in Beyer's (1990, 1998; Beyer & Bowden, 1997) research were nonacademic in nature and were administered in a laboratory setting. Because of the potential implications of inaccurate self-perceptions about academic ability, the present study endeavored to assess whether the observed gender differences and self-consistency effect generalize to the academic arena and a real-life setting. Because Beyer (1990, 1998; Beyer & Bowden, 1997) previously found that expectancies and self-evaluations depend greatly on the gender-type of the task, this study includes students taking classes which are typically considered feminine (Introductory Psychology and Social Psychology) and a masculine class (Computer Science). It was expected that gender differences would be most pronounced in Computer Science.

Does the accuracy of expectancies and post-examination self-evalnations increase with experience?

An important question is whether pre-examination expectancies and post-examination self-evaluations become more accurate as the semester progresses. Each successive examination affords students with the opportunity to compare their expectancies and self-evaluations to their actual grades. This recurring performance feedback should enable students to adjust their future expectancies and post-examination self-evaluations, thereby increasing accuracy.

Some researchers have found that accuracy of grade predictions improves with successive examinations (Radhakrishnan, Arrow, & Sniezek, 1996; Radhakrishnan, Probst, Sniezek, & Arrow, 1996; Shepperd, Ouellette, & Fernandez, 1996). On the other hand, Gordon (1991) and Powel and Gray (1995) found no improvement in prediction accuracy across time. Thus, at this point the evidence for an increase in the accuracy of expectancies with experience is mixed. The accuracy of post-examination self-evaluations is rarely investigated. The present research intends to study whether the accuracy of both expectancies and post-examination self-evaluations of performance improves with each successive examination.

Does the accuracy of expectancies increase with temporal proximity to an examination?

Expectations for performance are often unrealistically optimistic (Buehler, Griffin, & Ross, 1994; Gordon, 1991; Trippi & Stewart, 1989) and reveal self-serving biases. However, temporal closeness to the critical event such as a test decreases optimism (Radhakrishnan, Probst, Sniezek, & Arrow, 1996; Shrauger, Martin, Newkirk, & Lopez, 1997) in what Shepperd, Ouellette, and Fernandez (1996, p. 849) called people's "attempt to brace themselves for unpleasant feedback". Individuals can derive self-satisfaction and confidence from high expectancies when the critical event is far off into the future. But, by lowering their initially optimistic expectancies as the critical time approaches, they shield themselves from disappointment. Gilovich, Kerr, and Medvec (1993) also found that temporal closeness (in this case whether the participants were still students or had already graduated) improved participants' assessments of their ability to handle an increased work load. The present study provides another test of the effect of temporal proximity on the accuracy of expectancies.

The role of individual difference variables

Several individual difference variables may be related to the accuracy of self-perceptions. Individuals with low self-esteem (Gurman & Balban, 1990; Shrauger & Kelly, 1988; Shrauger & Terbovic, 1976) and people with moderate levels of narcissism (Gabriel et al., 1994; John & Robins, 1994) have more accurate self-perceptions than do high self-esteem or highly narcissistic individuals. Furthermore, the voluminous literature on depressive realism suggests that the self-perceptions of mildly depressed individuals are more accurate than those of nondepressed individuals (Alloy & Abramson, 1979, 1982; Crocker, Alloy, & Kayne, 1988; Glass, McKnight, & Valdimarsdottir, 1993; Lewinsohn, Mischel, Chaplin, & Barton, 1980). For this reason, participants' levels of self-esteem, narcissism, and depression were assessed. In addition, several further variables such as optimism, self-handicapping, attributional style, and overachievement were assessed.

Method

Participants

Participants were 26 women and 12 men in Introductory Psychology, 41 women and 20 men in Social Psychology, and 9 women and 36 men in Computer Science (for a total of 76 female and 68 male students). Because access to the Computer Science class was more restricted, collection of data in that class was more limited.

Materials

During the first two class meetings, students in Introductory Psychology and Social Psychology filled out the Overachievement Scale (Yost, Arkin, Jackimiec & Krebs, 1996), the Rosenberg Self-esteem Scale (Rosenberg, 1965), the Revised Self-handicapping Scale (Jones & Berglas, 1978), the Attributional Style Questionnaire (Peterson, Semmel, von Baeyer, Abramson, Metalsky, & Seligman, 1982), the Beck Depression Inventory (Beck, 1967), the Life Orientation Test (Scheier & Carver, 1985), and the Narcissism Scale (Raskin & Terry, 1988). Computer Science students were not available for these measures.

Procedure

At various points throughout the semester, students were asked to predict and evaluate their grades on examinations. Students' self-perceptions were assessed in terms of the number of points they expected to earn or thought they had earned on an examination. These point estimates will be referred to as expected grades for brevity's sake. One week prior to and immediately prior to taking an examination, students predicted their grade. Immediately after taking an examination they estimated the grade they had earned and predicted their grade on the next examination. Upon receipt of their grade for an

examination, they predicted their grade for the next examination (see Figure 1). Data collection in Computer Science did not include the measures of grade prediction one week prior to an examination.

Additional dependent variables included the amount of time students expected to study for an examination, the minimum grade with which they would be satisfied, the expected difficulty of the examination, how worried they were regarding their performance, and attribution questions concerning the causes of their performance.

Data were collected by the researcher who was also the instructor of the Psychology classes. Students were assured that the instructor was unable to identify their data due to the use of code numbers. They were truthfully told that research assistants would code and enter their data. Participation was completely voluntary. Students received extra credit for their participation.

Results

For each class analyses of variance (ANOVAs) were calculated for the accuracy measures with gender as a between-participant variable. Computer Science students took three examinations, whereas Social Psychology students took four examinations, and Introductory Psychology students five examinations. For this reason, class could not be used as a between-participant variable. Because of higher attendance on examination days, day-of-the-examination measures have greater statistical power than measures collected one week prior to or after return of the examination. Although this is unfortunate, tight experimental control in classroom settings is not always attainable. This disadvantage is offset by the fact that the data were collected in a real-world rather than artificial setting.

The accuracy of expectancies and self-evaluations and gender differences

Table 1 indicates the means for the accuracy of expectancies and self-evaluations by gender, class, and examination.

Accuracy of grade expectations. One week prior to taking an examination in Introductory Psychology, students significantly overestimated their grades on Examinations 1, 2, and 5, $Fs(1, 18) > 8.45$, $ps < .009$, but accurately predicted their grades for Examinations 3 and 4, $Fs(1, 20) < 1$. Males overestimated their grade to a significantly greater degree than did females on Introductory Psychology Examinations 2, 3, and 4, $Fs(1, 20) > 10.07$, $ps < .004$. Immediately prior to taking Examinations 1, 2, and 3 in Introductory Psychology students overestimated their grades, $Fs(1, 30) > 3.52$, $ps < .08$. On examinations 1 and 4 Introductory Psychology males overestimated their grades significantly more than did females, $Fs(1, 24) > 4.38$, $ps < .05$.

The incidence of overestimation was less pronounced in Social Psychology. One week prior to taking an examination in Social Psychology, students significantly overestimated their grades on Examinations 3 and 4, $Fs(1, 40) > 6.48$, $ps < .02$, but accurately predicted their grades for Examinations 1 and 2, $Fs(1, 38) < 1$. Immediately prior to Examination 4 in Social Psychology, $F(1, 50) = 35.26$, $p < .0001$, students overestimated their grades but accurately predicted their performance on Examinations 1, 2, and 3, $Fs(1, 46) < 2.02$, $ps > .16$.

Immediately prior to taking all of the Computer Science examinations students overestimated their grades, $Fs(1, 35) > 3.98$, $ps < .06$. None of the gender differences in the accuracy of expected grades reached significance in either Social Psychology of Introductory Psychology, $ps > .14$.

Accuracy of post-examination self-evaluations of grades. Immediately after taking an examination students accurately estimated their grades. The exceptions were overestimations for Examinations 1 and 2 in Introductory Psychology, $Fs(1, 30) > 7.10$, $ps < .02$, an underestimation on Examination 2 for Social Psychology, $F(1, 47) = 5.38$, $p < .03$, and an overestimation on Examination 4 for Social Psychology, $F(1, 49) = 12.74$, $p < .001$. On Examinations 4 and 5 in Introductory Psychology males overestimated their grades marginally more than did females, $Fs(1, 27) > 2.98$, $ps < .10$.

Accuracy of grade expectancies for the next examination. Even though their post-examination self-evaluations of grades were quite accurate, immediately after taking an examination students reverted to overestimating their grades for the next examination, $ps < .05$. The only exceptions were predicted grades for Examination 2 in Social Psychology, $F(1, 48) < 1$, and for Examination 3 in Introductory Psychology, $F(1, 29) < 1$. The gender difference in the accuracy of predictions for Examinations 2 in Introductory Psychology and Social Psychology was significant with males overestimating more than females, $F(1, 31) = 3.38$, $p < .08$; $F(1, 48) = 6.64$, $p < .02$, respectively.

Even after receiving feedback in the form of grades, students overestimated their grades for the next examination, $ps < .03$. The only exception was the prediction for Examination 3 in Introductory Psychology, $F(1, 27) < 1$. The gender difference in accuracy of predictions for Examinations 2 and 3 in Introductory Psychology was significant or of borderline significance, with males overestimating more than females, $F(1, 30) = 4.33$, $p < .05$; $F(1, 27) = 3.18$, $p < .09$. For Computer Science Examination 2 females overestimated their grades marginally more than did males, $F(1, 30) = 4.00$, $p < .06$.

Self-consistency

The self-consistency hypothesis was tested via multiple regression analyses for each class and for each examination. Predicted self-evaluations were regressed on actual grade on the examination, expected grade immediately prior to an examination, and gender. The significance of all the interactions was also tested. Actual grade should be the best predictor of post-examination self-evaluations because it provides students with immediate gut-level feedback. The self-consistency hypothesis claims that even with grades controlled, expected grades should significantly predict self-evaluations of grades. Given identical actual grades, students who had expected high grades should have higher self-evaluations than students who had expected

low grades.

Gender interacted with actual and/or expected grades on the majority of examinations for all three classes. Thus, separate regression equations are necessary for males and females. Nonsignificant predictors were deleted before the final multiple regression was computed. The increase in the amount of variance accounted for (ΔR^2) by actual and expected grades and their interaction can be seen in Table 2.

For females in Introductory Psychology Examinations 2, 3, 4, and 5, expected grade was a significant predictor of self-evaluations, $Fs(1, 19) > 22.08$, $ps < .0001$. Actual grade emerged as a significant predictor of self-evaluations on Examinations 1 and 4, $Fs(1, 13) > 13.60$, $ps < .003$. For males, on Examinations 1, 2, and 4 actual grade, expected grade, and their interaction were significant, $Fs(1, 5) > 6.17$, $ps < .06$. On Examinations 3 and 5, the only significant predictor of self-evaluations was expected grade, $Fs(1, 7) > 5.46$, $ps < .05$.

For females in Social Psychology, expected grades, $Fs(1, 30) > 5.76$, $ps < .03$, and actual grades, $Fs(1, 30) > 3.25$, $ps < .09$, were significant predictors on Examinations 1, 2, and 3. For females on Examination 4 only expected grade was significant, $F(1, 33) = 57.43$, $p < .0001$. For males on Examination 1, actual grade, $F(1, 14) = 5.02$, $p < .05$, and expected grades, $F(1, 14) = 10.50$, $p < .006$, were significant but on Examinations 2, 3, and 4 only the effect of expected grade was significant, $Fs(1, 14) > 5.10$, $ps < .04$.

For females in Computer Science, actual grade, $F(1, 5) = 13.26$, $p < .02$, and expected grades, $F(1, 5) = 43.92$, $p < .001$, were significant predictors of self-evaluations on Examination 1. On Examination 2, the interaction between expected and actual grades was a significant predictor, $F(1, 5) = 12.30$, $p < .02$ and on Examination 3, only expected grade was a significant predictor, $F(1, 7) = 37.95$, $p < .0001$. For males on Examination 1, expected grade, $F(1, 28) = 13.44$, $p < .001$, and actual grade, $F(1, 28) = 12.04$, $p < .002$, were significant predictors. On Examinations 2 and 3 only expected grade was a significant predictor of self-evaluations, $Fs(1, 22) > 28.67$, $p < .0001$.

To summarize, grade expectancies emerged as a strong predictor of post-examination self-evaluations. The self-consistency effect is clearly evident in Figures 2 through 4. The graphs depict males' and females' predicted self-evaluations for each examination when they had an average actual grade and expected either a low grade (mean expected grade minus one standard deviation), average grade, or high grade (mean expected grade plus one standard deviation). If students accurately evaluated their examination performance, their predicted self-evaluations would fall on the horizontal line labeled "average grade." Points below the average grade line represent underestimations, points above it overestimations of grades.

The steep slopes in Figures 2-4 indicate that expected grades predict students' self-evaluations of performance. Given identical examination grades, students with low expected grades had lower self-evaluations than students with high expected grades. For example, Introductory Psychology males on Examination 4 with a grade of 69% had predicted self-evaluations of 47% when they had expected a low grade, i.e., they greatly underestimated their grade, whereas males who had expected high grades had overly optimistic self-evaluations of 107%.

The effect of experience on the accuracy of expectancies

The effect of experience on grade expectancies and self-evaluations of performance was analyzed by repeated measures analyses. For each class, gender was used as a between-participant variable and the number of the examination as a within-participant variable. Because the number of examinations varied for each class, class was not used as a between-participant variable. Only students for whom accuracy measures for all examinations were available were used in these analyses.

For Introductory Psychology, expectancies measured one week prior to an examination, $F(4, 8) = 9.76$, $p < .004$, and expectancies measured immediately prior to taking an examination, $F(4, 16) = 11.47$, $p < .0001$, became more accurate with experience. For expectancies measured immediately prior to taking an examination, gender interacted with experience, $F(4, 16) = 3.05$, $p < .05$. Females were more accurate throughout the course of the semester, but the accuracy of males' expectancies improved more than females'. There was a trend for expectancies for future examinations to become more accurate with experience when measured immediately after an examination, $F(3, 20) = 2.63$, $p < .08$, and after receiving the results of the previous examination, $F(3, 12) = 4.77$, $p < .03$. There was no effect of experience on the accuracy of post-examination self-evaluations, $F(4, 19) = 2.20$, $p < .11$. Thus, accuracy increased with experience for Introductory Psychology students for most of the dependent variables.

In contrast, for Social Psychology expectancies measured one week prior to an examination, $F(3, 19) = 4.73$, $p < .02$, immediately prior to an examination, $F(3, 40) = 14.33$, $p < .0001$, for the next examination measured immediately after an examination, $F(2, 39) = 9.81$, $p < .0001$, and for the next examination measured after receiving their grades back, $F(2, 23) = 7.44$, $p < .003$, actually became less accurate with experience. This effect is attributable to overly optimistic expectancies for Examination 4. In addition, post-examination self-evaluations went from being underestimations of grades to being overestimations of grades with experience, $F(3, 39) = 11.90$, $p < .0001$.

There was no effect of experience on the accuracy of expectancies for Computer Science, $F(2, 31) = 1.04$, $p < .37$. There was also no effect of experience on the accuracy of expectancies for future examinations for Computer Science as measured immediately after taking an examination, $F(1, 34) = 2.35$, $p < .14$, or upon receipt of their grade for the most recent examination, $F(1, 24) = 2.55$, $p < .13$. However, experience interacted with gender for these two measures, $F(1, 34) = 4.59$, $p < .04$; $F(1, 24) = 6.13$, $p < .03$. Whereas females' expectancies were less accurate than males' initially, they eventually became more accurate than males'. There was no effect of experience on the accuracy of post-examination self-evaluations for Computer Science, $F(2, 29) < 1$.

The effect of temporal proximity on the accuracy of expectancies and self-evaluations

The effect of temporal proximity on the accuracy of expectancies was investigated by calculating ANOVAs for each class with gender as a between-participant variable and timing of the expectancy as a within-participant variable (labeled as Times 1 through 4; see Figure 1). Data for Computer Science students do not include Time 3 because they did not receive expectancy measures one week prior to an examination. Only students for whom data on all time measures on an examination were available were included in the analyses. See Table 3 for the means of the accuracy of expectancies by class and examination.

There was only weak evidence for an effect of temporal proximity. The effect of temporal proximity did not reach significance in Introductory Psychology, $Fs(3, 12) < 3.02$, $ps > .08$. The only effects of temporal proximity for Social Psychology occurred for Examinations 2 and 4, $F(3, 30) = 2.92$, $p < .05$; $F(3, 22) = 4.80$, $p < .01$. However, Examination 4 actually showed a reverse temporal proximity effect, with decreasing accuracy as the time of the examination approached. The interaction with gender was significant on Examination 2, $F(3, 30) = 3.63$, $p < .03$, indicating a stronger temporal proximity effect for males than females. The only effect of temporal proximity for Computer Science occurred for Examination 2, $F(3, 28) = 4.76$, $p < .02$.

The role of individual difference variables in accuracy

Table 4 displays the correlations between individual difference variables and accuracy and performance measures. None of the individual difference variables correlated consistently with the accuracy measures. However, the various accuracy measures showed substantial intercorrelations. In general the higher the overestimations at one point in time, the higher the overestimation at a later point in time. In addition, the negative correlations between grades and the various accuracy measures indicate that those individuals who overestimated the most also tended to have the lowest grades.

Discussion

Evidence for gender differences in the accuracy of expectations and self-evaluations

In Introductory Psychology female students' expectancies and self-evaluations, albeit overly optimistic, were more accurate than those of their male counterparts. Virtually no gender differences emerged in Social Psychology and Computer Science. Although the explanation of this finding is somewhat speculative, the lack of experience with academic standards in college may affect male students more than females. Females' tendency to be more cautious in their expectancies (e.g., Beyer, 1990, 1995, 1998; Beyer & Bowden, 1997) may have tempered the effect of college inexperience for them. In addition, males tend to attribute failure more to a lack of studying than females, with females more likely than males to believe that failure is due to a lack of ability (Beyer, in press). Thus males may have anticipated an improvement in their grades with increased studying for subsequent examinations and therefore persisted in their overly optimistic expectancies. It was expected that Computer Science students would show the greatest gender difference in the accuracy of self-perceptions. This was not the case. However, statistical power was rather low in Computer Science due to the fact that only nine females took the course. Thus, presently it is not clear whether the absence of significant gender differences in Computer Science is due to generally more accurate grade expectancies and self-evaluations in more advanced courses or to a lack of statistical power.

Evidence for self-consistency

Expected grades had a significant effect on self-evaluations, even with actual grades controlled, revealing self-consistent tendencies. Thus, low expectancies are not just indicators of low confidence, they also perpetuate low confidence by depressing individuals' self-evaluations of performance. This points out that a high grade does not always lead to high evaluations of performance. High pre-examination grade expectancies also play an important role in the process.

Evidence for the effect of experience

The most consistent finding in this study was that the great majority of students overestimated their grades prior to taking an examination. Does experience decrease grade expectancies and bring them into line with reality? Practice had no effect on the accuracy of grade expectancies of Computer Science students. However, practice affected the accuracy of Introductory Psychology students' expectancies positively. Expectancies became more accurate with each successive examination. The opposite occurred for Social Psychology students, where the accuracy of expectancies and self-evaluations declined. However, this unexpected effect was entirely driven by grade expectancies and self-evaluations on the final. Social Psychology students' grades were lower for the final than for their previous examinations. It appears that the final was much more difficult than the first three examinations. If students based their grade expectancies on their results on previous examinations, their expectancies for the final would invariably be overly optimistic. This points out that grade expectancies do not operate in a vacuum. Instructors may intentionally or unintentionally vary the difficulty level of their examinations, thereby producing inaccurate grade expectancies among their students.

Why did only Introductory Psychology students' show a positive practice effect? A lack of experience with college academic standards may be to blame, resulting in the unrealistically high grade expectancies and self-evaluations of Introductory Psychology students. Possibly these students were expecting to receive the grades they were accustomed to in high school. The more experienced Social Psychology and Computer Science students, although often overestimating, had more reasonable initial expectancies and therefore had less room for an improvement in accuracy. Interestingly, another study which included both lower- and upper-level psychology students also reported that introductory students' grade expectancies dropped more than the grade expectancies of more advanced students (Gilovich, Kerr, & Medvec, 1993). Although inexperience is but one possible explanation of the results, it suggests that it

would behoove researchers to test their hypotheses in different courses, different disciplines, and in lower-level versus advanced courses. Do the unrealistically optimistic grade expectancies of college students have negative consequences? Inaccurately high expectancies for performance may lead to complacency and/or the selection of inappropriate courses. Furthermore, the disappointment from a grade that is lower than expected may be a demotivating experience. However, positive perceptions of competence, even if they are overly optimistic, are intimately tied to higher aspirations, preference for challenging tasks, curiosity, intrinsic motivation, persistence, and task performance (Beyer, 1995; Boggiano, Main, & Katz, 1988; Cutrona, Cole, Colangelo, Assouline, & Russell, 1994; Elliott & Dweck, 1988; Grolnick & Slowiaczek, 1994; Harackiewicz & Elliot, 1993; Harter & Connell, 1984; Phillips, 1984, 1987). Thus, it appears that optimism may actually serve to maintain or even increase performance (Shrauger, Martin, Newkirk, & Lopez, 1997). Furthermore, positive self-perceptions are related to psychological health (e.g., Janoff-Bulman, 1989; Snyder, 1989; Taylor & Armor, 1997; Taylor & Brown, 1988, 1994) and self-esteem (Lindeman, Sundvik, & Rouhiainen, 1995; but see Colvin & Block, 1994, for an alternative view), whereas negative self-perceptions are related to depression (e.g., Alloy & Abramson, 1979, 1982; Brown, Andrews, Bifulco, & Veiel, 1990; Brown, Bifulco, & Andrews, 1990; Crocker et al., 1988; Glass et al., 1993).

Temporal proximity

Expectancies became somewhat more accurate the closer in time they were to the actual examination. However, this effect was weak, reaching significance for fewer than half of the examinations. A similar observation of the inconsistency of the temporal proximity effect was made by Radhakrishnan, Arrow, and Sniezek (1996). Presently, strong conclusions about the existence of a proximity effect are not advisable.

Conclusions

The expected gender difference in the accuracy with which males and females predict examination grades was found only for Introductory Psychology. A lack of statistical power may be to blame for the absence of gender effects in Computer Science. Alternatively, by the time students advance to courses such as Social Psychology and Computer Science they have become more accurate predictors of their performance, erasing earlier gender differences.

References

Alloy, L. B., & Abramson, L. Y. (1979). Judgment of contingency in depressed and nondepressed students: Sadder but wiser? **Journal of Experimental Psychology: General, 108,** 441-485.

Alloy, L. B., & Abramson, L. Y. (1982). Learned helplessness, depression, and the illusion of control. **Journal of Personality and Social Psychology, 42,** 1114-1126.

Arnold, L., Willoughby, T. L., & Calkins, E. V. (1985). Self-evaluation in undergraduate medical education: A longitudinal perspective. **Journal of Medical Education, 60,** 21-28.

Beck, A. T. (1967). **Depression: Clinical, experimental, and theoretical aspects**. New York: Harper & Row.

Beyer, S. (1990). Gender differences in the accuracy of self-evaluations of performance. **Journal of Personality and Social Psychology, 59,** 960-970.

Beyer S. (1995). Maternal employment and children's academic achievement: Parenting style as mediating variable. **Developmental Review, 15,** 212-253.

Beyer S. (1998). Gender differences in self-perception and negative recall biases. **Sex Roles, 38,** 103-133.

Beyer, S. (in press). Gender differences in causal attributions. **Current Psychology**.

Beyer, S., & Bowden E. M. (1997). Gender differences in self-perceptions: Convergent evidence from three measures of accuracy and bias. **Personality and Social Psychology Bulletin, 23,** 157-172.

Boggiano, A. K., Main, D. S., & Katz, P. A. (1988). Children's preference for challenge: The role of perceived competence and control. **Journal of Personality and Social Psychology, 54,** 134-141.

Borkenau, P., & Liebler, A. (1993). Convergence of stranger ratings of personality and intelligence with self-ratings, partner ratings, and measured intelligence. **Journal of Personality and Social Psychology, 65,** 546-553.

Brown, G. W., Andrews, B., Bifulco, A., & Veiel, H. (1990). Self-esteem and depression: I. Measurement issues and prediction of onset. **Social Psychiatry and Psychiatric Epidemiology, 25,** 200-209.

Buehler, R., Griffin, D., & Ross, M. (1994). Exploring the "planning fallacy": Why people underestimate their task completion times. **Journal of Personality and Social Psychology, 67,** 366-381.

Crocker, J., Alloy, L. B., & Kayne, N. T. (1988). Attributional style, depression, and perceptions of consensus for events. **Journal of Personality and Social Psychology, 54,** 840-846.

Cutrona, C. E., Cole, V., Colangelo, N., Assouline, S. G., & Russell, D. W. (1994). Perceived parental social support and academic achievement: An attachment theory perspective. **Journal of Personality and Social Psychology, 66,** 369-378.

Elliott, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. **Journal of Personality and Social Psychology, 54,** 5-12.

Gabriel, M. T., Critelli, J. W., & Ee, J. S. (1994). Narcissistic illusions in self-evaluations of intelligence and attractiveness. **Journal of Personality, 62,** 143-155.

Gilovich, T., Kerr, M., & Medvec, V. H. (1993). Effect of temporal perspective on subjective confidence. **Journal of Personality and Social Psychology, 64,** 552-560.

Glass, D. C., McKnight, D., & Valdimarsdottir, H. (1993). Depression, burnout, and perceptions of control in hospital nurses. **Journal of Consulting and Clinical Psychology, 61,** 147-155.

Gordon, M. J. (1991). A review of the validity and accuracy of self-assessments in health profession training. **Academic Medicine, 66**, 762-769.

Gurman, E. B., & Balban, M. (1990). Self-evaluations of physical attractiveness as a function of self-esteem and defensiveness. **Journal of Social Behavior and Personality, 5**, 575-580.

Hannover, B. (1991). Zur Unterrepräsentanz von Mädchen in Naturwissenschaften und Technik: Psychologische Prädiktoren der Fach- und Berufswahl. **Zeitschrift für Pädagogische Psychologie, 5**, 169-186.

Harackiewicz, J. M., & Elliot, A. J. (1993). Achievement goals and intrinsic motivation. **Journal of Personality and Social Psychology, 65**, 904-915.

Harter, S., & Connell, J. P. (1984). A model of children's achievement and related self-perceptions of competence, control, and motivational orientation. In J. G. Nicholls (Ed.), **Advances in motivation and achievement**, Vol. 3 (pp. 219-250). Greenwich, CT: JAI Press.

Janoff-Bulman, R. (1989). The benefits of illusions, the threat of disillusionment, and the limitations of inaccuracy. **Journal of Social and Clinical Psychology, 8**, 158-175.

John, O. P., & Robins, R. W. (1994). Accuracy and bias in self-perception: Individual differences in self-enhancement and the role of narcissism. **Journal of Personality and Social Psychology, 66**, 206-219.

Jones, E. E., & Berglas, S. (1978). Control of attributions about the self through self-handicapping strategies: The appeal of alcohol and the role of underachievement. **Personality and Social Psychology Bulletin, 4**, 200-208.

Kruglanski, A. W. (1989). The psychology of being "right": The problem of accuracy in social perception and cognition. **Psychological Bulletin, 106**, 395-409.

Kurman, J., & Sriram, N. (1997). Self-enhancement, generality of self-evaluation, and affectivity in Israel and Singapore. **Journal of Cross-Cultural Psychology, 28**, 421-441.

Lawton, C. A., Charleston, S. I., & Zieles, A. S. (1996). Individual-related and gender-related differences in indoor wayfinding. **Environment and Behavior, 28**, 204-219.

Lewinsohn, P. M., Mischel, W., Chaplin, W. C., & Barton, R. (1980). Social competence and depression: The role of illusory self-perceptions. **Journal of Abnormal Psychology, 89**, 203-212.

Peterson, C., Semmel, A., von Baeyer, C., Abramson, L. Y., Metalsky, G. I., & Seligman, M. E. P. (1982). The Attributional Style Questionnaire. **Cognitive Therapy and Research, 6**, 287-300.

Phillips, D. (1984). The illusion of incompetence among academically competent children. **Child Development, 55**, 2000-2016.

Phillips, D. (1987). Socialization of perceived academic competence among highly competent children. **Child Development, 58**, 1308-1320.

Powel, W. D., & Gray, R. (1995). Improving performance predictions by collaboration with peers and rewarding accuracy. **Child Study Journal, 25**, 141-154.

Radhakrishnan, P., Arrow, H., & Sniezek, J. A. (1996). Hoping, performing, learning, and predicting: Changes in the accuracy of self-evaluations of performance. **Human Performance, 9**, 23-49.

Radhakrishnan, P., Probst, T. M., Sniezek, J. A., & Arrow, H. (1996). **The predictive validity of self-evaluation: Examining the effects of temporal context, temporal distance, and experience**. Paper presented at the annual meeting of the Society for In□dustrial and Organizational Psychological, San Diego.

Raskin, R., & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality Inventory and some further evidence of its construct validity. **Journal of Personality and Social Psychology, 54**, 890-902.

Reilly, J., & Mulhern, G. (1995). Gender differences in self-estimated IQ: The need for care in interpreting group data. **Personality and Individual Differences, 18**, 189-192.

Roberts, T.-A., & Nolen-Hoeksema, S. (1989). Sex differences in reactions to evaluative feedback. **Sex Roles, 21**, 725-747.

Rosenberg, M. (1965). **Society and the adolescent self-image**. Princeton, NJ: Princeton University Press.

Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. **Health Psychology, 4**, 219-247.

Shepperd, J. A., Ouellette, J. A., & Fernandez, J. K. (1996). Abandoning unrealistic optimism: Performance estimates and the temporal proximity of self-relevant feedback. **Journal of Personality and Social Psychology, 70**, 844-855.

Shrauger, J. S., & Kelly, R. J. (1988). Global self-evaluation and changes in self-description as a function of information discrepancy and favorability. **Journal of Personality, 56**, 709-728.

Shrauger, J. S., Martin, A., Newkirk, J. L., & Lopez, E. L. (1997). Explicit self-appraisals, overoptimism, and subsequent performance: Doing as you said instead of as you did.

Shrauger, J. S., & Terbovic, M. L. (1976). Self-evaluation and assessments of performance by self and others. **Journal of Personality and Social Psychology, 44**, 564-572.

Snyder, C. R. (1989). Reality negotiation: From excuses to hope and beyond. **Journal of Social and Clinical Psychology, 8**, 130-157.

Taylor, S. E., & Armor, D. A. (1997). Positive illusions and coping with adversity. **Journal of Personality, 61**,

Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social-psychological perspective on mental health. **Psychological Bulletin, 103**, 193-210.

Trippi, J., & Stewart, J. B. (1989). The relationship between self-appraisal variables and the college grade performance and persistence of Black freshmen. **Journal of College Student Development, 30**, 484-491.

Yost, J. H., Arkin, R. M., Jackimiec, J., & Krebs, J. (1996, June). **The role of attributions in overachievement behaviors**. Paper presented at the annual meeting of the American Psychological Society, San Francisco.

Table 1. Gender Differences in the Accuracy of Expected Grades and Self-evaluations

Class / Exam Number	Accuracy of expected grades: 1 week prior to an exam		immediately prior to an exam		for the next exam after taking an exam		feedback		self-evaluations after an exam	
	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males
Intro Psychology										
Exam 1	1.7	1.6	1.3[1]	2.4[1]	1.4	2.5	1.1[1]	2.2[1]	0.8	1.6
Exam 2	0.9[1]	2.3[1]	1.0	1.4	0.3	1.1	0.1	1.0	0.6	1.1
Exam 3	-0.2[1]	1.2[1]	-0.5	0.4	1.1	1.9	1.1	1.8	-0.1	0.3
Exam 4	0.2[1]	1.5[1]	0.0[1]	1.7[1]	1.1	1.5	1.0	1.2	0.4	1.3
Exam 5	0.8	1.5	0.2	0.8	-	-	-	-	0.1	1.1
Social Psychology										
Exam 1	0.1	0.7	0.1	0.0	0.1[1]	0.9[1]	0.5	0.4	-0.2	-0.4
Exam 2	0.1	0.4	-0.2	-0.1	0.4	0.7	0.6	0.9	-0.4	-0.3
Exam 3	0.4	0.8	0.3	0.0	0.9	1.3	1.1	1.6	0.1	0.2
Exam 4	0.9	1.0	1.0	0.7	-	-	-	-	0.6	0.6
Computer Science										
Exam 1	-	-	1.0	1.1	1.7	1.3	1.9	0.8	0.0	0.4
Exam 2	-	-	0.8	0.2	1.1	1.3	0.9	1.2	0.2	0.0
Exam 3	-	-	1.3	1.0	-	-	-	-	0.3	0.9

Note: A score of 1 indicates an overestimation by one full letter grade
[1] $p < .05$ [2] $p < .01$ [3] $p < .001$

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Table 2. Amount of Additional Explained Variance (ΔR^2) for Variables Predicting Self-evaluations

Class Exam Number	Step 1 Performance R^2 Females	Males	Step 2 Expectancies ΔR^2 Females	Males	Step 3 Performance x Expectancies ΔR^2 Females	Males
Intro Psychology						
Exam 1	.73[4]	.04	.02	.27	.00	.52[2]
Exam 2	.49[4]	.57[1]	.18[3]	.36[3]	.00	.04
Exam 3	.33[2]	.01	.15[1]	.53[1]	.03	.13
Exam 4	.32[1]	.48[1]	.51[3]	.18	.00	.28[3]
Exam 5	.27[1]	.00	.65[4]	.45[1]	.01	.08
Social Psychology						
Exam 1	.28[3]	.35[2]	.11[1]	.28[2]	.01	.05
Exam 2	.36[4]	.24	.40[4]	.39[2]	.01	.00
Exam 3	.22[2]	.22	.45[4]	.18	.00	.04
Exam 4	.38[4]	.21	.27[4]	.42[1]	.02	.07
Computer Science						
Exam 1	.45[1]	.59[4]	.49[3]	.14[3]	.01	.01
Exam 2	.39	.35	.40[2]	.40[4]	.15[1]	.02
Exam 3	.67[2]	.18[1]	.23[2]	.38[4]	.03	.01

Notes: Females are dummy-coded as 0, males as 1.
[1] $p < .05$ [2] $p < .01$ [3] $p < .001$ [4] $p < .0001$

Table 3. The Effect of Temporal Proximity

Class Exam Number	TIME 1 Accuracy of expectancies for the next exam right after taking an exam	TIME 2 for the next exam after receipt of previous exam	TIME 3 1 week prior to an exam	TIME 4 immediately prior to an exam
Intro Psychology				
Exam 1	-	1.6	1.4	1.3
Exam 2	1.6	1.4	1.5	1.1
Exam 3	0.2	0.2	0.2	-0.4
Exam 4	0.7	0.9	0.5	-0.1
Exam 5	1.0	0.9	1.1	0.6
Social Psychology				
Exam 1	-	0.3	0.3	0.1
Exam 2	0.2	0.3	0.3	-0.2
Exam 3	0.4	0.6	0.6	0.2
Exam 4	0.7	0.9	0.9	0.8
Computer Science				
Exam 2	1.3	1.01	-	0.5
Exam 3	1.3	1.02	-	1.0

Table 4. Intercorrelations between the Various Accuracy Measures and Actual Grades

	Accuracy of expectancies		Accuracy of self-evaluations
	1 week prior to an exam	immediately prior to an exam	after taking an exam
Exam 1			
immediately prior to exam	0.822[1]		
after taking an exam	0.662[1]	0.713[1]	
actual grade on exam	-0.861[1]	-0.755[1]	-0.542[1]
Exam 2			
immediately prior to exam	0.711[1]		
after taking the exam	0.631[1]	0.842[1]	
actual grade on exam	-0.850[1]	-0.632[1]	-0.547[1]
Exam 3			
immediately prior to exam	0.540[1]		
after taking the exam	0.473[1]	0.683[1]	
actual grade on exam	-0.776[1]	-0.638[1]	-0.508[1]
Exam 4			
immediately prior to exam	0.841[1]		
after taking the exam	0.659[1]	0.640[1]	
actual grade on exam	-0.587[1]	-0.644[1]	-0.500[1]
Exam 5			
immediately prior to exam	0.823[1]		
after taking the exam	0.728[1]	0.870[1]	
actual grade on exam	-0.724[1]	-0.265	-0.329

Note: [1] $p < .0001$

Figure 1. Timing of the Main Dependent Variables

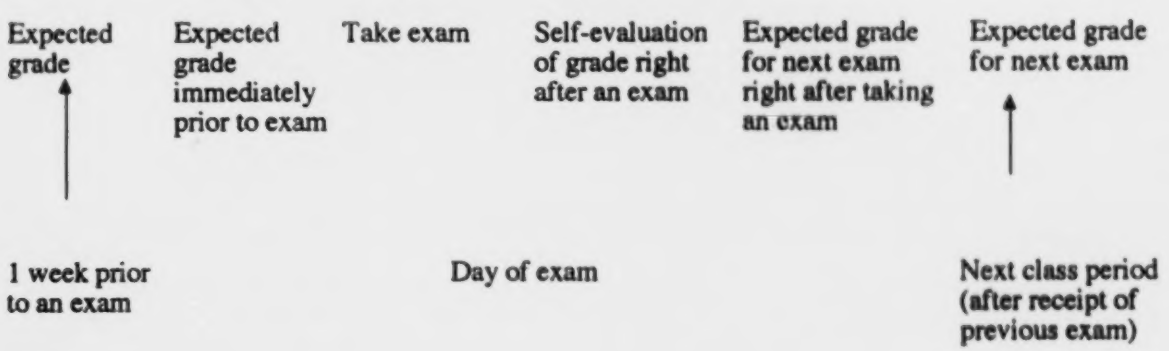

Expected grade
Expected grade immediately prior to exam
Take exam
Self-evaluation of grade right after an exam
Expected grade for next exam right after taking an exam
Expected grade for next exam
1 week prior to an exam
Day of exam
Next class period (after receipt of previous exam)

Figure 2. Introductory Psychology

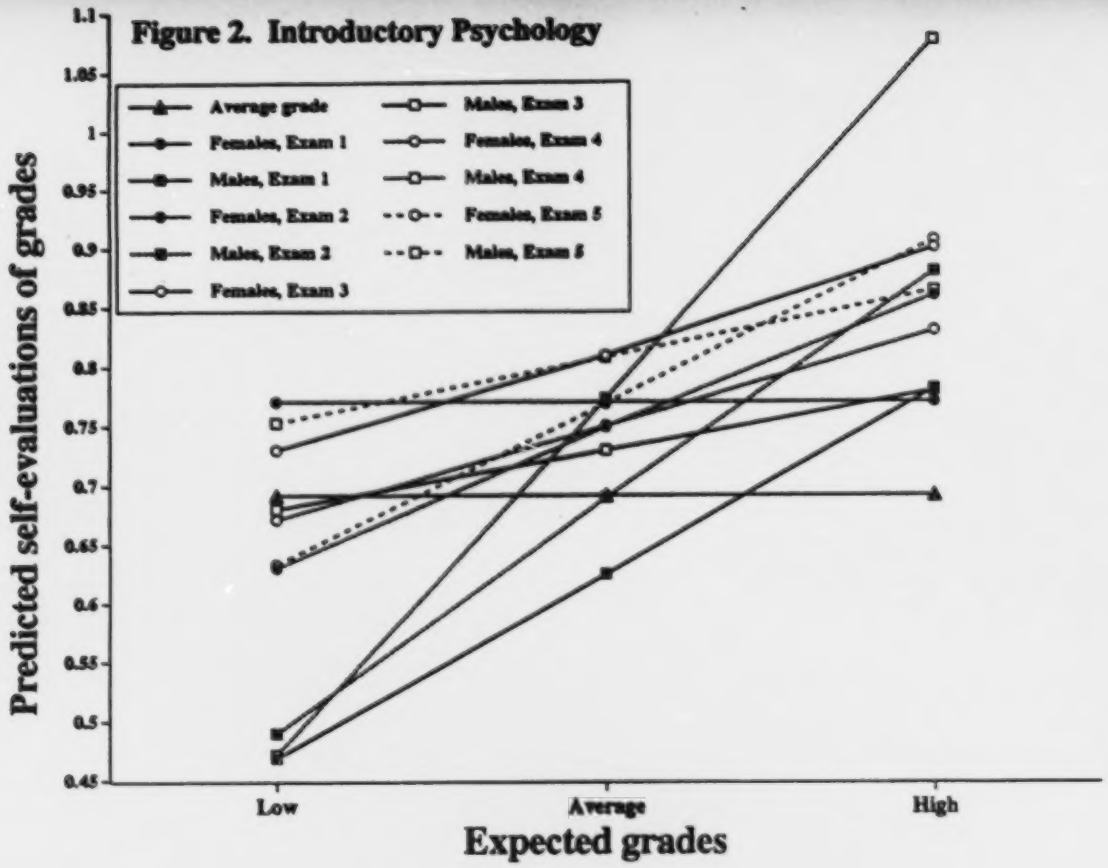
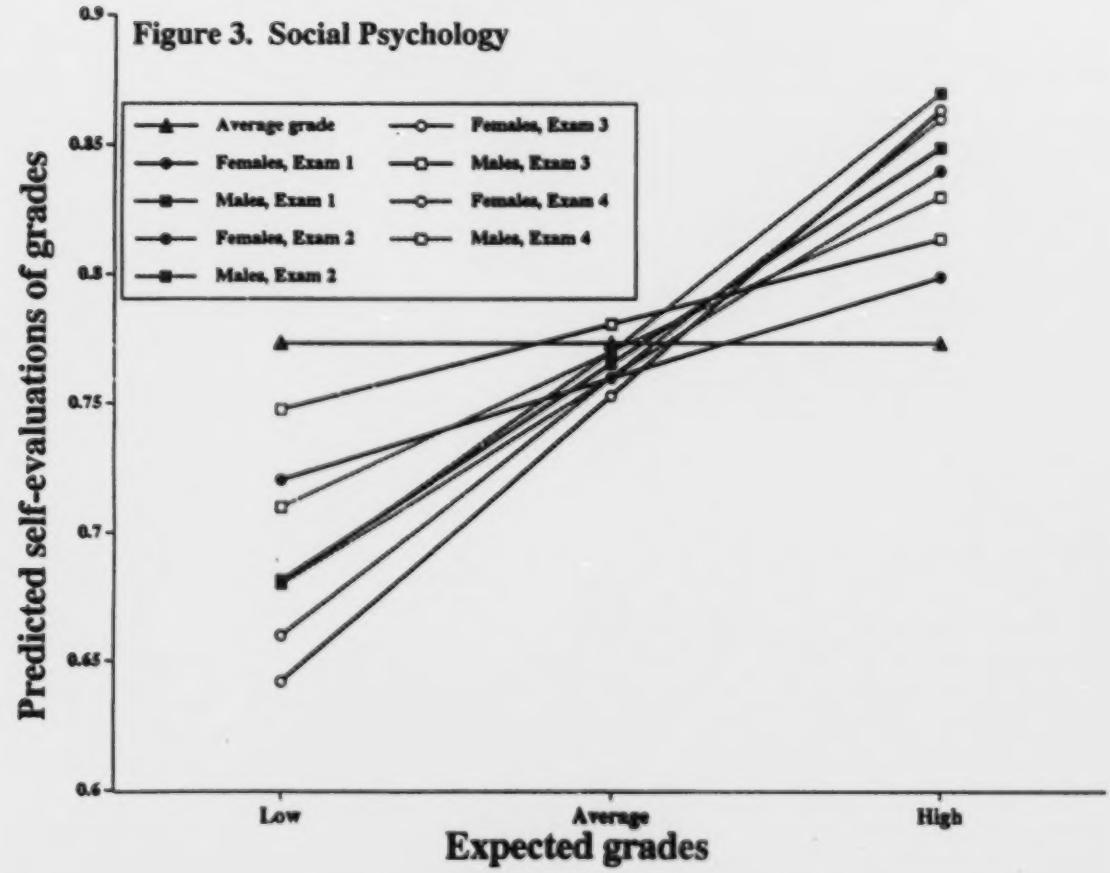


Figure 3. Social Psychology



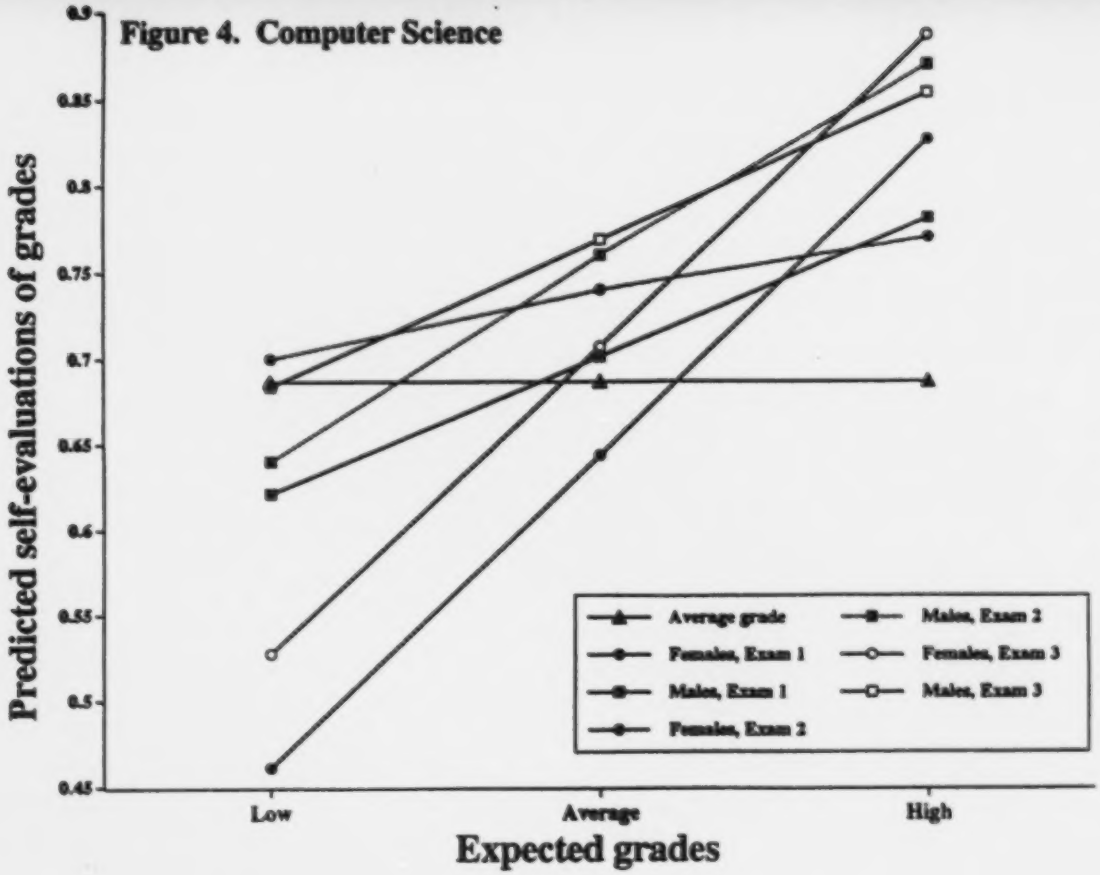


Figure 4. Computer Science
Predicted self-evaluations of grades
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
Low
Average
High
Expected grades
Average grade
Females, Exam 1
Males, Exam 1
Females, Exam 2
Males, Exam 2
Females, Exam 3
Males, Exam 3